CLAIMS

What is claimed is:

1. A method of updating non-volatile memory in an electronic device via a communication network, the non-volatile memory comprising at least one memory device having an associated type, the method comprising:

receiving update information via the communication network;

selecting one of the at least one memory device to be updated using the update information;

identifying updating software corresponding to at least the associated type of the one of the at least one memory device to be updated; and

updating the one of the at least one memory device using the identified updating software and the update information.

2. The method according to claim 1, further comprising determining the associated type of the one of the at least one memory device to be updated.

3. The method according to claim 1, wherein the communication network is a wireless network.

4. The method according to claim 1, wherein the communication network is a public network.

5. The method according to claim 1, further comprising verifying the updating of the one of the at least one memory device using one of a CRC, a checksum, a hash code, and a digital signature.

6. A method of updating non-volatile memory in an electronic device via a communication network, the non-volatile memory comprising at least one memory device having an associated type, the method comprising:

communicating update information in an update package via the communication network from a management server to the electronic device; and

employing the update agent to interact with a memory library and the at least one memory device in non-volatile memory in the electronic device.

7. The method according to claim 6, further comprising:

employing a memory manager to access contents stored in the at least one memory device, wherein the at least one memory device comprises at least one FLASH memory chip; and

employing the memory library to modify contents of the at least one FLASH memory chip.

8. The method according to claim 7, wherein the at least one FLASH memory chip further comprises a plurality of FLASH memory chips, and the plurality of FLASH memory chips are fabricated by one of a same manufacturer and different manufacturers, and the plurality of FLASH memory chips comprise one of a same amount of memory size and a different amount of memory size.

9. The method according to claim 8, further comprising:

determining which of the plurality of FLASH memory chips correspond to a particular FLASH memory modification;

employing an appropriate FLASH memory chip function; and

performing a corresponding FLASH memory modification.

10. The method according to claim 8, further comprising employing the memory library by the update agent to permit access to and manipulation of a plurality of FLASH memory chips fabricated by different manufacturers, and invoking appropriate functions stored in the memory library corresponding to the different manufacturers FLASH memory chips.

11. The method according to claim 6, further comprising storing generic functions in the memory library which are employable by the update agent; and

modifying contents of the at least one memory device without identifying actual details regarding a specific memory device, wherein the actual details may be selected from a group comprising memory device manufacturer, memory device type, memory size, memory model, and memory brand.

12. The method according to claim 6, wherein the at least one memory device further comprises a plurality of memory devices, and the plurality of memory devices are adapted to be grouped together, paired together, or arranged serially in non volatile memory in the electronic device.

13. The method according to claim 6, further comprising creating a memory map of memory device architecture, the memory map containing information selected from a group comprising of a number of memory devices being employed by the electronic device, address ranges assigned to the memory devices, memory device operating mode, a map of data segments resident in the memory devices, and a map of code segments resident in the memory devices.

14. The method according to claim 6, wherein the electronic device comprises one of a mobile cellular phone handset, a personal digital assistant, a pager, an MP3 player, and a digital camera.

15. The method according to claim 6, further comprising employing an update package status and reference section by the update agent code to retrieve information regarding functions stored in a memory library code.

16. The method according to claim 15, wherein the update package status and reference section further comprises at least one of a status flag, starting address, authentication value, location of update package, and locations of a plurality of modification functions in non-volatile memory of the electronic device.

17. The method according to claim 6, wherein the update package comprises update information for at least one of firmware and software, version upgrades, instructions to add new services, and instructions to delete services employable in the electronic device.

18. The method according to claim 6, further comprising employing a boot initialization code to determine whether an update agent code is executed.

19. The method according to claim 18, wherein determining whether the update agent code is executed comprises evaluating status information resident in an update package status and reference section, and wherein if it is determined that the update agent code is to be executed, then the update agent code accesses an update package resident in the non-volatile memory of the electronic device by employing an address of the update package stored in the update package status and reference section.

20. The method according to claim 6, wherein the at least one memory device comprises a plurality of memory devices, and the update agent is adapted to interact with the plurality of memory device as a single logical block of non-volatile memory without distinguishing between specific memory devices.

21. The method according to claim 20, wherein the plurality of memory devices are arranged according to one of contiguously or non-contiguously in memory, and code and data resident in the memory devices are updateable by the update agent regardless of which memory device the code and data reside in.

22. The method according to claim 6, wherein the memory library is adapted to accommodate a plurality of different types of memory devices by being provided with drivers for the plurality of different types of memory devices during manufacture.

23. The method according to claim 6, wherein the update agent is adapted to accommodate a plurality of different types of memory devices by accessing the memory library and compiling the update agent anew with drivers for the plurality of different types of memory devices stored in the memory library during manufacture.

24. The method according to claim 6, wherein the electronic device comprises at least one processor, and wherein the at least one processor may be associated with a specific memory device.

25. The method according to claim 24, wherein the at least one processor comprises a plurality of processors and the at least one memory device comprises a plurality of memory devices, and wherein each of the processors is associated with a specific memory device.

26. The method according to claim 24, wherein the at least one processor comprises a plurality of processors and the at least one memory device comprises a plurality of memory devices, and wherein the plurality of processors are adapted to share the plurality of memory devices.

27. The method according to claim 24, wherein the at least one processor comprises a digital signal processor (DSP) adapted to execute DSP code retrieved from at least one memory device.

28. A mobile services network adapted to update at least one electronic device, the network comprising:

a management server communicatively connectable to the at least one electronic device via a communication link, the management server adapted to transmit update information in an update package to the electronic device, and the electronic device comprising an update agent employing a memory library to interact with at least one memory device in non-volatile memory in the electronic device.

29. The network according to claim 28, further comprising:

a memory manager adapted to be employed by the update agent to access contents stored in the at least one memory device; and

a memory library adapted to support modifications of content in the at least one memory device.

30. The network according to claim 28, wherein the at least one memory device further comprises a plurality of memory device, and the plurality of memory devices are fabricated by one of a same manufacturer and different manufacturers, and the plurality of memory devices comprise one of a same amount of memory size and a different amount of memory size. .

31. The network according to claim 30, wherein the update agent is adapted to determine which of the plurality of memory devices correspond to a particular memory modification, and employ an appropriate memory device function available in the memory library to perform a corresponding memory modification.

32. The network according to claim 28, wherein the memory library is employable by the update agent to permit access to and manipulation of a plurality of memory devices fabricated by different manufacturers by invoking appropriate functions stored in the memory library which correspond to the different manufacturers memory devices.

33. The network according to claim 28, wherein the memory library may store generic functions employable by the update agent to modify contents of a plurality of memory devices without identifying actual details regarding a specific memory device, the actual details may be selected from a group comprising memory manufacturer manufacturer, memory type, memory size, memory model, and memory brand.

34. The network according to claim 28, wherein the at least one memory device further comprises a plurality of memory devices, and the plurality of memory devices are adapted to be grouped together, paired together, or arranged serially.

35. The network according to claim 28, further comprising a memory map of memory device architecture, the memory map being adapted to contain information selected from a group comprising a number of memory devices being employed by the electronic device, address ranges assigned to the memory devices, memory device operating mode, a map of data segments resident in the memory devices, and a map of code segments resident in the memory devices.

36. The network according to claim 28, wherein the electronic device comprises one of a mobile cellular phone handset, a personal digital assistant, a pager, an MP3 player, and a digital camera.

37. The network according to claim 28, wherein the non-volatile memory further comprises an update package status and reference section employable by an update agent code to retrieve information regarding functions stored in a memory library code.

38. The network according to claim 28, wherein the update package comprises update information for at least one of firmware and software, version upgrades, instructions to add new services, and instructions to delete services employable in the electronic device.

39. The network according to claim 28, wherein the electronic device is adapted to employ a boot initialization code to determine whether an update agent code is executed, and determining whether the update agent code is executed comprises evaluation of status information resident in an update package status and reference section, wherein if it is determined that the update agent code is to be executed, then update agent code accesses an update package resident in the non-volatile memory by employing an address of the update package stored in the update package status and reference section.

40. The network according to claim 39, wherein the update package status and reference section further comprises at least one of a status flag, starting address, authentication value, location of update package, and locations of a plurality of modification functions in non-volatile memory of the electronic device.

41. The network according to claim 28, wherein the at least one memory device comprises a plurality of memory devices, and the update agent is adapted to interact with the plurality of memory devices as a single logical block of non-volatile memory with distinguishing between specific memory devices.

42. The network according to claim 41, wherein the plurality of memory device may be arranged as one of contiguously or non-contiguously in memory, and code and data resident in the memory devices are updateable by the update agent regardless of which memory device the code and data reside in.

43. The network according to claim 28, wherein the memory library is adapted to accommodate a plurality of different types of memory devices by being provided with drivers for the plurality of different types of memory devices during manufacture.

44. The network according to claim 28, wherein the update agent is adapted to accommodate a plurality of different types of memory devices by accessing the memory library and compiling the update agent with drivers for the plurality of different types of memory devices stored in the memory library during manufacture.

45. The network according to claim 28, wherein the electronic device comprises at least one processor, and wherein the at least one processor may be associated with a specific memory device.

46. The network according to claim 45, wherein the at least one processor comprises a plurality of processors and the at least one memory device comprises a plurality of memory devices, and wherein each of the processors is associated with a specific memory device.

47. The network according to claim 46, wherein the at least one processor comprises a plurality of processors and the at least one memory device comprises a plurality of memory devices, and wherein the plurality of processors are adapted to share the plurality of memory devices.

48. The network according to claim 46, wherein the at least one processor comprises a digital signal processor (DSP) adapted to execute DSP code retrieved from at least one memory device.

49. A mobile handset comprising:

a plurality of flash memory chips; and

an update agent capable of updating at least one of firmware and software resident in at least one of the plurality of flash memory chips.

50. The mobile handset according to claim 49, wherein the update agent is adapted to determine information regarding a type of each of the plurality of flash memory chips at runtime, the mobile handset further comprises a plurality of flash drivers, wherein the mobile handset is adapted to employ an appropriate one of the plurality of flash drivers to update at least a portion of at least one of firmware and software resident in at least one of the plurality of flash memory chips.

51. The mobile handset according to claim 50, further comprising a plurality of processors, wherein each of the processors is adapted to manipulating a specific subset of the plurality of flash memory chips, and the plurality of processors are also adapted to employ the update agent to update at least one of firmware and software resident in at least one specific subset of flash memory chips.

52. The mobile handset according to claim 49, further comprising:

a first processor adapted to update at least one of firmware and software resident in at least one of the plurality of flash memory chips;

a second processor adapted to execute code resident in at least one of the plurality of flash memory chips, wherein the first processor is adapted to execute the update agent to update at least one of firmware and software resident in at least one of the plurality of flash memory chips, and the second processor is adapted to execute an update version of code resident in at least one of the plurality of flash memory chips.